

What is claimed is

1. A traveling wave optical modulator comprising:
an optical waveguide substrate made of an electro-optic and ferroelectric single crystal in the form of an X- or Y-orientation plate and comprising a thicker portion having a larger thickness and a thinner portion having a smaller thickness;

first and second branched optical waveguide portions formed at least on the thinner portion of the optical waveguide substrate;

a set of electrodes provided on at least the thinner portion of the substrate and adapted for applying voltage to the first and second optical waveguide portions to modulate a light propagating the optical waveguide portions; and

a buffer layer provided to cover a part of the optical waveguide portions at the thinner portion of the substrate, the electrodes crossing on the buffer layer.

2. The traveling wave optical modulator set forth in claim 1, wherein plural buffer layers are provided at respectively plural portions which the electrodes cross, and a deviation between a total length of said plural buffer layers in one optical waveguide portion as extending along the optical waveguide portion and that of said plural buffer layers in the optical waveguide portion as extending along the optical waveguide portion is not more than 0.2 mm.

3. The traveling wave optical modulator set forth in claim 2, wherein each of said plural buffer layers has such a band-like shape as extending along the optical waveguide portion.

4. The traveling wave optical modulator set forth in ~~any one of claims 1 to 3~~, wherein at least one end portion of the buffer layer or at least one buffer layer as viewed along the optical waveguide portions

is provided with a taper portion of which thickness gradually changes as viewed along the optical waveguide.

5. The traveling wave optical modulator set forth in ^{claim 1}~~any one of~~
~~claims 1 to 3~~, which is adapted to pass a TE mode light through the optical waveguide portions.

6. The traveling wave optical modulator set forth in claim 4, which is adapted to pass a TE mode light through the optical waveguide portions.

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